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Subject: Reply Comment Filing, WT Docket 96-86

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

January 26, 1998

William F. Caton, Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Ref: WT Docket 96-86

Secretary Caton:

I have attached to this email an MS Word 6.0 file which constitutes my Reply Comments filing for WT Docket 96-86 which is due today. I attempted several times to use the Electronic Comment Filing System, but the document was rejected.

I am forwarding by overnight mail an original and 10 copies of the document to the above address for distribution to the Commissioners and to FCC staff.

Sincerely,

/s/ John S. Powell

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**Before the
COMMUNICATIONS
Washington, D.C. 20554**

In the Matter of)
)
The Development of Operational, Technical, and)
Spectrum Requirements for Meeting Federal, State) WT Docket No. 96-86
and Local Public Safety Agency Communications)
Requirements Through the Year 2010)

To: The Commission

REPLY COMMENTS

of

JOHN S. POWELL

John S. Powell
PO Box 4342
Berkeley, CA 94704-0342

REPLY COMMENTS OF JOHN S. POWELL

These comments are being submitted by a twenty-four year veteran police sergeant who “works the street” each shift supervising officers on a major public university campus in the metropolitan Eastbay area of San Francisco, California. I am concerned that my staff has access to state-of-the-art technologies, coupled with sufficient spectrum in which to properly implement and use them, to provide safe and efficient public safety services to our community. For example, my agency can not today implement a mobile data system because there are no longer any public safety radio channels available in our immediate area that are usable for this application. Whether the need is for emergency medical, fire, law enforcement or a myriad of related health and welfare requirements, our common goal is that the public must be safe and public safety personnel must be able to return safely to their families at the end of each shift. There can be no higher domestic priority for the Commission than to take actions which promote those goals.

BACKGROUND

I am providing comments as an individual with significant communications background and experience. I graduated from the University of California at Berkeley with a BS degree in electrical engineering in 1973 and immediately began a law enforcement career with the UC Police Department; I was promoted to sergeant in 1977. I have supervised Patrol, Communications & Records, Administration, Special Projects, Crime Prevention and Emergency Preparedness. While assigned to Communications, I designed and implemented UC's E-911/Computer Assisted Dispatch Center and recently participated in the development and award of a contract for a statewide 800 MHz NPSPAC trunked radio system serving all units of the University's nine campuses and four medical centers. I have participated in a number of disaster mutual aid assignments, including the 1971 Sylmar Earthquake in Southern California, the 1989 Loma Prieta earthquake in Santa Cruz, and I coordinated communications in a field command post during the 1991 Oakland Hills Fire. I have been a member of the Association of Public Safety Communications Officials, International (APCO) for 24 years, serving as President of the Northern California Chapter for two terms and as President of APCO International, during 1992-93. I chaired APCO's Law Enforcement Advisory Committee for three years, was President of the APCO Automated Frequency Coordination (AFC) Board of Directors for three years and have been a member of APCO Project 25's Steering Committee since its inception in 1989, co-chairing Project 25 during 1992-93. I currently chair the User Needs Subcommittee of APCO Project 34 (High Speed Data Project). As a member of the APCO Board and as APCO President, I had the opportunity to work closely with the FCC and Congress to address important issues of Spectrum Refarming, the protection of state/local government 2 GHz microwave assignments, the allocation of new public safety spectrum, and securing a Congressional mandate for a public safety spectrum needs study in the Omnibus Budget Reconciliation Act of 1993. During the recent Public Safety Wireless Advisory Committee (PSWAC) process, I served as a member of APCO's PSWAC Task Force and participated actively on all of the subcommittees,

particularly Interoperability (where I chaired the Future Interoperability Needs Working Group), Spectrum Requirements, and Technology. I have been a member of the California Legislature's Joint Committee on Fire, Police, Emergency and Disaster Services and currently serve as a member of the California Governor's Office of Emergency Services (OES) CLEMARS Advisory Committee. I serve as Vice-Chair of the Communications Subcommittee for the Law Enforcement and Corrections Technology Advisory Committee at the National Institute of Justice, US Department of Justice. I am a life member of APCO, a member of the Communications Committee of the International Association of Chiefs of Police (IACP), a member of the Institute of Electrical and Electronic Engineers, and a fellow of the Radio Club of America.

Based on this experience, I am submitting these comments as an individual. They do not necessarily represent the views of my employer nor any of the above organizations, many of which will be submitting their own comments on these issues.

INTRODUCTION

It is important to note the widespread consensus on many of the issues raised by the FCC in the Second Notice. In particular, there is consensus among the comments filed by federal, state and local public safety agencies. Specifically the Comments of the National Public Safety Telecommunications Council (hereafter "NPSTC") are extremely detailed and present a consensus opinion of the major public safety organizations.

Before addressing specific areas of concern, the I want to comment on the positions of the state/local public safety community on two major issues. First, while many comments supported the Congressional definitions for public safety, the Commission should adopt the definitions for public safety, public safety services, public safety services provider, and public safety support provider recommended in the Final Report of the Public Safety Wireless Advisory Committee

(PSWAC). To do otherwise will leave many government users ineligible in this band. It will, furthermore, deprive many agencies of the cost and service benefits that can be realized on a shared system, to the point that many systems might not be built. Second, there is virtually unanimous agreement that the Commission should not dedicate a large part of this new band for interoperability alone, calling to the attention of the Commission the recommendation from the PSWAC Final Report that 2.5 MHz of interoperability spectrum must come from the bands between 138 and 512 MHz.

Finally, the proposed band plan filed with the Commission in the Comments of NPSTC as Appendix A is the result of significant planning effort. Not only does it address allocation issues, it also provides an opportunity to address harmonic interference issues raised by the FAA and others. I will now address specific issues from Comments received by the Commission in the general order that they were presented in the Second Notice of Proposed Rulemaking.

I. Interoperability and Equipment Standards

The Commission must support an appropriate allocation of spectrum for interoperability and choose appropriate technology to implement interoperability. As noted in our opening paragraphs, the general public safety community opposes the allocation of a “significant portion” of this band for interoperability; many support the band plan presented by the NPSTC. I concur with this support.

I have been involved in the design and installation of a statewide NPSPAC trunked radio system for the University; when completed, it will represent an investment exceeding \$20 million. A number of incidents, primarily involving response to major incidents by the University’s 300+ sworn member police department, has pointed out the complexities of managing a large trunked system. With new equipment being regularly added at all campuses (each of which hosts a separate trunked system), it is difficult to manage the individual unit identifiers across the state and ensure that all databases are current. It is especially difficult to update the database at a campus while an incident is in progress and units are arriving from across the state. Additionally, experience has shown that even with trunking systems designed to provide good coverage in high density campus environments, it is still necessary to revert to simplex operation in order to communicate in some areas. I therefore support Comments of the organizations that opposed the Commission’s proposal to require trunking on interoperability channels.

I support the majority of Comments requesting that the Commission establish 12.5 kHz FDMA (11K3F3E) as the analog baseline for interoperability.

While the manufacturing community does not support the adoption of digital interoperability standards by the Commission, I note the overwhelming number of Comments filed by the public safety user community recommending that the Commission adopt at least a baseline

common air interface for digital interoperability.

As noted in the background information above, I have been a member of the APCO Project 25 Steering Committee since its inception in 1989. The Project 25 Phase I (12.5 kHz FDMA) Common Air Interface (CAI) is about to be adopted as an ANSI standard. I strongly support the Comments of APCO, the states of California and Florida, the New York State Police, NPSTC and others in recommending that the Commission immediately adopt the APCO Project 25 Phase I (12.5 kHz FDMA) CAI as the digital baseline for interoperability as part of this rulemaking. Such adoption also supports the position expressed above for an analog baseline because the Project 25 Phase I CAI standard requires “backward compatibility” to 12.5 kHz analog. This immediate adoption is consistent with the PSWAC Final Reports recommendation that such adoption take place within two years following release of that Report.

The largest survey of law enforcement communications needs ever conducted will be released shortly by the US Department of Justice. Compiled by the Rocky Mountain Law Enforcement and Corrections Technology Center at Denver University (one of several Regional Centers operated by the National Institute of Justice), this draft study clearly documents the explosive growth in data communications anticipated by survey participants. Project 25 Phase I includes a complete suite of 12.5 kHz FDMA data standards based on the same CAI developed for voice communications. This low speed (≤ 9.6 kbps) data standard should likewise be adopted for the same reasons presented by commenters in support of the digital voice baseline.

As a member of APCO Project 34, I support its efforts to develop standards for high speed data as described in Comments of the Project 25 Steering Committee. Project 34, with grant funding from the National Institute of Justice, is using the existing Project 25

Memorandum of Understanding with manufacturers and the standards development agreement negotiated with the Telecommunications Industry Association (TIA) to move rapidly on this effort, with significant initial support from the manufacturing community.

In designing the proposed NPSTC band plan (NPSTC Appendix A), we gave careful consideration to placing the primary block of frequencies for which concern has been expressed with respect to 2nd harmonic emissions by the FAA and by MSS within the unallocated and high speed data sub-bands at 799.0000 to 802.5000 MHz, allowing Project 34 and others developing equipment and technical standards for this new application to address interference protection at the initial stages of product and standards development.

I strongly disagree with Ericsson's proposal that digital modulation and encryption not be allowed in this band. The PSWAC Final Report cites numerous instances where message security is a critical operational requirement for interoperability. For example, both "day-to-day" and "task force" interoperability (two of three types of interoperability defined in the PSWAC Final Report) when applied to criminal justice applications often require message security. Encryption is readily implemented on systems using digital modulation, with the Project 25 CAI designed to support up to the most secure encryption required by federal agencies responsible for national security.

II. Eligibility

I believe that the major use of operational spectrum (both voice and data) in the 764-806 MHz public safety band will be for multi-agency governmental trunked systems, such as those NPSPAC systems currently operated by my employer throughout California. These systems, by their very design (and if permitted by the system manager), provide interoperability among all participants. In our case, this means that EMS, fire and police,

as well as parking enforcement, public works and other related services, all have access to common trunked interoperability talk groups; no interoperability channels are required and users are afforded all of the standard features available on that trunking system. Such systems are inherently efficient, both in terms of spectrum use and dollar investment. The presence of non-emergency responders on such systems provide added capacity during major events by using the talk group priority feature to grant access to emergency responders in a timely manner. Finally, with most general government functions operating during regular business hours, added capacity is available to EMS, fire and law enforcement agencies whose peak traffic normally occurs during non-business hours. These multi-use systems clearly qualify as “public safety services” and should be eligible for licenses in this band.

I recognize and support the need for federal government access to interoperability channels identified in this new spectrum, pursuant to national and regional plans. However, I disagree with NTIA’s request for access to operational spectrum in this new band, except to the extent that federal agencies may be participants on shared governmental systems where contractual agreements could be negotiated to protect the investment of the federal participants in such systems. I call to the Commission’s attention that the federal agencies made it clear that they had no need for additional operational spectrum during the PSWAC process.

I do not support federal entities holding interoperability licenses in the 764-806 MHz band.

Rather, I support the concept successfully employed in California for many years where the state holds all licenses for fixed equipment operating on interoperability channels, as described in the Comments of the State of California, noting that agencies including the FBI, INS and USFS today have access to, and regularly use, interoperability channels in California under the California plan.

I strongly support comments from the American Petroleum Institute, UTC, and others that certain “public service providers,” as defined by PSWAC, have access to interoperability spectrum for life and property threatening emergencies so long as they are users for interoperability purposes only, and such use is in accordance with an approved regional plan, as described below. I do not support such entities holding actual licenses.

I strongly believe that licenses for 764-806 MHz public safety spectrum should only be held by state and local government entities. While the Budget Act does permit non-government entities to operate in this band, the non-government entity must have the protection of safety, life, health or property as its sole or principal purpose and be authorized by a state or local government to provide public safety services. It is my belief that the actual license should be held by the authorizing state or local governmental agency. The only exception to this restriction should be for such federally chartered organizations as the American Red Cross.

I strongly oppose any access to this spectrum by commercial service providers such as Compu-Dawn. While such organizations may provide services to governmental organizations, the licenses for any spectrum involved **MUST** be held by the governmental agency contracting for such services. To do otherwise would rapidly pollute public safety spectrum with for-profit commercial services. In the instant Notice, these commercial providers clearly do not meet the statutory requirements for licensing in the 764-806 MHz band.

III. National and Regional Planning

I agree with the general support expressed in most comments for a strong National Plan which among other things, includes:

Establishing operating parameters and regulations for the regional committees, including a requirement for appropriate representation of safety services
Establishing general parameters and standard nomenclature for interoperability channels
Defining participation of federal agencies for interoperability purposes
Establishing clear requirements for “give-up” frequencies
Establishing, to the extent permitted by law and the Commission’s action on this Notice, channeling, interoperability, eligibility and other similar requirements.

The Joint Comments of AASHTO, FCCA, IAFC, IAFWA, IMSA and NASF (hereafter “Joint Comments”) suggest that national planning for the 764-806 MHz spectrum be done by NPSTC. I do not support this position, noting that NPSTC is a voluntary association of organizations with no legal standing to undertake such an activity, nor do most of its members have any experience in regional planning. Rather, I support the recommendation of APCO and, specifically, the recommendation APCO will make in its Reply Comments that the national planning committee be a “federal advisory committee or other similar body...[and] ... should consist of individuals (not organizations as is the case with NPSTC) with technical expertise and proven leadership in the regional planning process.”

The Federal Law Enforcement Wireless Users Group (“FLEWUG”) recommends that all interoperability spectrum planning be on a national level. I regularly use day-to-day interoperability and my employer is one of the largest users of law enforcement mutual aid interoperability in California. While I recognize and support the need to include federal agencies in interoperability planning, I note that most interoperability involves state and local agencies and, thus, must be planned for on a regional level.

I also object to the FLEWUG proposal for “six to eight super-regions” as only adding another layer of bureaucracy and associated time delay to the planning process. What will be the source of financial support for participation by non-federal agencies in such an organization?

The comments show widespread support for regional planning similar to that current employed in the NPSPAC band, based upon guidelines from the strong national plan referenced above. While the Joint Comments imply that regional planning has major problems, nothing could be farther from the truth. The few problems cited pale in comparison to the thousands of stations that have been successfully licensed. Beyond that, these successful systems represent the latest technologies and some of the largest public safety systems ever constructed. Finally, NPSPAC Regional Plans clearly represent the highest spectrum efficiency ever attained in the Private Land Mobile Radio Services.

The Joint Comments recommend planning on a state-by-state basis. Only four of the current 55 NPSPAC regions actually cross state boundaries. These four regions reflect the reality that spectrum propagation does not adhere to artificial boundaries such as state lines. To organize otherwise in these areas would require separate action by each of the state planning organizations to approve each and every allocation. State planning is not only unnecessary, but is an unworkable solution, adding many layers of bureaucracy to a process that is now well understood and usually operates well.

Two states, California and Texas, have been subdivided into multiple regions. These divisions were requested by these regions to reflect the realities of geography, population, size and to limit travel required of regional participants. I actively participate in both Regions 5 and 6 within California and strongly oppose the recommendation by the Joint Comments to consolidate these two regions into subcommittees of a state planning organization.

I am also concerned with the implication in the Joint Comments that “state planning” might be controlled by state government. Beyond the fact that most states do not have the staff nor budget to support such an effort, regional planning must involve all layers of government.

There could be significant political ramifications to delegating such authority to state governments. Furthermore, such an effort in California would certainly be interpreted as an “unfunded federal mandate.”

In order to begin this process in a timely manner to meet a Congressional deadline for commencement of licensing, I recommend that the planning process begin immediately with establishment of a federal advisory committee charged with developing the National Plan described above, operating according to strict deadlines. The national committee needs to immediately decide those issues which are critical to regional planning (such as requiring representation from all services on local committees and defining a strong “giveback” policy) so that regions can begin their work quickly. The national committee can then decide longer term issues (such as interoperability channel designations, etc). As the national committee begins its work, minor changes that may be appropriate for regional boundaries (including consolidation of regions within Texas if members of those regions deem it appropriate) can be made. The resulting regions will be ready to begin planning upon completion of the National Plan.

IV. Frequency Coordination

The Joint Comments support competition in frequency coordination for the 764-806 MHz band.

APCO, on the other hand, proposes to continue as the sole coordinator, as they do today for frequencies above 800 MHz.

I firmly believe that competition has no role with respect to regulating frequency coordination for public safety spectrum. It is analogous to awarding fire fighting or law enforcement to the lowest bid from several (for- and/or non-profit) organizations. Instead, the Commission should strive for the highest quality service at an affordable price. To do otherwise puts lives at risk; interference which must be tolerated during dispute resolution clearly represents potential risk to lives and property.

Beyond the fact that APCO clearly represents all public safety services (its current president is a fire officer), it offers, or is capable of offering, several services which are critical to regional planning and are beyond the capabilities of the other current public safety coordinators:

It has a network of local frequency advisors in every NPSPAC region who are intimately familiar with technical, geographical and major political concerns of their region.

It has a significant financial base that it is willing to commit to support the development of a database and provide initial startup support for the new regional committees, providing costs can be later recovered.

It has 13 years of experience with Regional Planning, starting in 1984 with the NPSPAC Federal Advisory Committee, providing continuing support for the implementation of, and modifications to, the 55 regional plans, and finally handling the filing of virtually all NPSPAC license applications with the Commission. It is the only coordinator with experience coordinating large, multi-agency systems.

The Joint Comments suggest that their for-profit contractor, CET, maintain the master database

for coordination in this spectrum. This important resource can not be left in control of a for-profit organization that is free to operate as it sees fit, including the establishment of charges which may or may not be appropriate for the services provided. APCO, a non-profit organization, currently maintains a database that is already used to some extent for NPSPAC planning activities and whose structure and delivery mechanism to its field personnel could be readily modified to support the regional planning envisioned for this new spectrum.

Lest the Commission forget, APCO is almost solely responsible, through its legislative and regulatory efforts, for the existence of the NPSPAC spectrum and NPSPAC planning process developed in the 1980s. When the advent of PCS threatened to force relocation of public safety microwave users from the 2 GHz band, it was APCO who worked with the Congress and FCC to ensure that the full costs of public safety microwave relocation were paid for by the new PCS user in each impacted area. Finally, in 1993 APCO began the current effort which eventually resulted in convening of the PSWAC and ultimately the assignment of the current 24 MHz of spectrum to public safety. APCO members provided a significant portion of the technical and writing support for development of both the PSWAC Final Report (and many Subcommittee reports) and for the Comments filed by the NPSTC in response to this 2nd Notice. APCO represents the interests of all public safety users.

Regardless of service, APCO has always protected the interests of all public safety users. For example, in October 1997, the Commission relaxed rules as part of the Refarming proceeding which allowed commercial entities to file for channels in the 470-512 MHz band adjacent to channels currently occupied by public safety incumbents. APCO realized the potential conflict and harmful interference that could result and filed an emergency petition to stay further licensing that could interfere with public safety systems. In the

interim, APCO's local frequency advisors in these major population centers have been carefully reviewing each application to ensure that no interference results. While the local advisors in California have objected immediately to applications that would impact not only police departments, but also fire departments, I am unaware of any similar objections filed by the fire service coordinator or by any coordinator other than APCO.

Beyond these issues, the Commission needs to carefully examine the underlying reasons being given by all coordinators in support of their positions. Are they truly representing their constituents? Are they concerned that all public safety agencies obtain the highest quality of service and the protection of their systems from interference? While I believe all of the coordinators truly have concern that their constituents' voice not be lost in the crowd (a concern that I genuinely share), it is my observation that the business survival of some of the coordinators often directly influences positions, resulting in recommendations that are not in the overall interests of the public safety community and of their constituents. Two of the current coordinators (APCO and FCCA) are communications organizations; interestingly, both have chosen to use local/regional advisors to assist in their coordination efforts. The other two coordinators each constitute a small portion of their overall organizations which have a much broader area of interest; both of these coordinators operate from a central facility and have minimal interaction with local activities in any particular area of the country.

For all of the reasons given above, the Commission should designate APCO as the sole coordinator for all public safety services above 764 MHz.

V. Technical Issues

I generally support the Comments of the State of California. However, I strongly disagree with California's recommendation that no new spectrum be assigned for image/high speed

data/video. As a participant in both California NPSPAC Regions, I note that the needs of the major non-state agencies within California, have been generally met in the NPSPAC spectrum. Assuming that a channel plan similar to NPSPAC Appendix A is implemented, there should be a sufficient number of general use channels, over and above the 100 recommended for state/regional use, for assignment to the State of California to meet its needs. I supports the channel plan proposed by NPSTC, which provides significant spectrum for image/high speed data/digital video.

Ericsson's proposal appears to embrace 6.25 kHz channeling in this band for voice communications. In discussions with Ericsson, it appears that they actually are supporting 12.5 kHz channels with the possibility of aggregating or disaggregating channels to meet user needs. If this is true, I support that position as long as voice/low speed data channels are not aggregated beyond 25 kHz.

The State of Florida recommends that channels be distributed to allow for the inexpensive implementation of systems in this band. In recognition of these issues, the NPSTC band plan (NPSTC Appendix A) follows the Florida recommendations. I support this recommendation

Several Comments support establishing receiver standards. Receiver performance characteristics must be known to properly coordinate frequencies. I support the adoption of TIA TSB-88 as the methodology for predicting interference, and urge the Commission to work with APCO, NPSTC, TIA and other involved parties to resolve issues regarding receiver performance.

VI. Broadcast/Public Safety Interference Protection

I support the comments of Motorola and NPSTC regarding the TV broadcast vs. public safety

land mobile interference protection criteria for the 764-806 MHz band. Motorola explains in detail that a 40 dB D/U signal ratio at the Grade B contour, proposed by the Commission, will adequately protect broadcasters. The Commission should examine further reductions as recommended.

CONCLUSIONS

In conclusion, the Commission needs to now move forward rapidly to implement required rules, establish planning committees and establish public policies to permit implementation of this critically needed spectrum.

Respectfully submitted,

John S. Powell